

VERTICAL DRAM AND FABRICATION METHOD THEREOF

Abstract

A vertical DRAM and fabrication method thereof. The vertical DRAM has a plurality of memory cells on a substrate, and each of the memory cells has a trench capacitor, a vertical transistor, and a source-isolation oxide layer in a deep trench. The main advantage of the present invention is to form an annular source diffusion and an annular drain diffusion of the vertical transistor around the sidewall of the deep trench. As a result, when a gate of the transistor is turned on, an annular gate channel is provided. The width of the gate channel of the present invention is therefore increased.